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CASE REPORT

Posterior Gastric Artery Aneurysm

Miguel Lemos Gomes [a,b,*], **Alice Lopes** [a,b], **Gonçalo Sobrinho** [a,b,c], **Luís Mendes Pedro** [a,b,c]

[a] Vascular Surgery — Heart and Vessels Department, Hospital de Santa Maria (CHLN), Lisbon, Portugal
[b] Lisbon Academic Medical Centre, Lisbon, Portugal
[c] Medical School, University of Lisbon, Lisbon, Portugal

Introduction: Aneurysms of small abdominal vessels are extremely rare; however, even minor aneurysmal accessory arteries can rupture, leading to potentially fatal consequences. The purpose of this paper is to report a case of coil embolisation of an aneurysmal posterior gastric artery.
Case presentation: The authors describe the case of a 66 year old female patient with an aneurysm of the posterior gastric artery. Coil embolisation was performed. The six month follow up computed tomography angiogram revealed exclusion of the aneurysm.
Discussion: The presented case is exceedingly rare. This type of aneurysm has to be kept in mind as a possible cause of bleeding, despite the limited information regarding their natural history.
Conclusion: Owing to the safety and applicability of the endovascular technique, it is nowadays probably the best treatment alternative for this type of aneurysm.

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INTRODUCTION

Aneurysms of small abdominal vessels are extremely rare; gastric artery aneurysms (GAAs) and gastroepiploic aneurysms together represent less than 4% of all splanchnic artery aneurysms. The aetiology has been attributed to atherosclerosis, trauma, and infection.[1] A few comorbid conditions are also commonly present, namely peptic ulcer disease, vasculitis, and pancreatitis.[2]

The majority of these aneurysms are located along the left or right gastric arteries, whereas aneurysms along the greater curvature of the stomach are encountered much less frequently, at a reported ratio of 1:10.[3]

The true natural history of this type of aneurysm is unknown.[1] However, even minor aneurysmal accessory arteries can rupture, leading to potentially fatal consequences. It is known that more than 90% of reported GEAs are ruptured on initial presentation.

The purpose of this paper is to report a case of coil embolisation of an aneurysmal posterior gastric artery. Informed consent was obtained.

* Corresponding author. Lisboa, 1649-035, Portugal.
E-mail address: gomes.l.miguel@gmail.com (Miguel Lemos Gomes).

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Case report

A 66 year old female patient with a past medical history of breast and endometrial cancer, gastro-esophageal reflux disease (GERD), hypertension, and smoking habits, underwent abdominal computed tomography angiography (CTA) because of complaints of abdominal pain. Incidentally, an aneurysm of the posterior gastric artery was identified (normal vessel 2 mm; aneurysmal vessel 12 mm; Fig. 1). She was only taking omeprazole (20 mg). There was no history of trauma. Endoscopy revealed findings compatible with her underlying disease (GERD). The laboratory workup was normal.

Under local anaesthesia and using a percutaneous right femoral approach, a 80 cm 6F introducer sheath (Flexor Standard Introducer, Cook Medical, Bloomington, IN, USA) was placed in the splenic artery for support. Catheterisation of the posterior gastric artery was performed using a 0.014 inch guidewire (ProVia 9 Guidewire, Medtronic, Minneapolis, MN, USA) supported by a 4F 110 cm straight catheter (Radiofocus Glidecath, Terumo Corporation, Japan). Coil embolisation was performed in the aneurysmal sac (it was not possible to catheterise the outflow vessel) and in the afferent vessel, using 3/2 coils (Tornado coils, Cook Medical, Bloomington, IN, USA) (Fig. 2).

The procedure was uneventful and the patient was discharged the following day. The six month follow up CTA revealed exclusion of the aneurysm, maintenance of the splenic flow and no splenic or gastric infarction (Fig. 3).

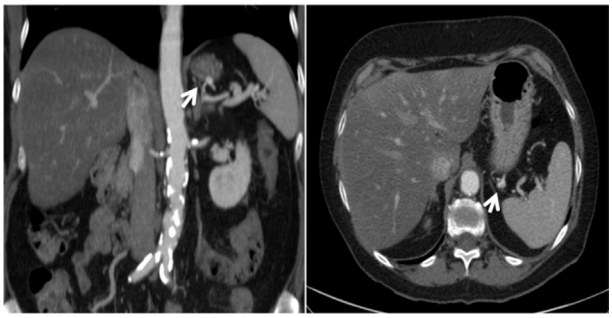

Figure 1. Aneurysm of the posterior gastric artery on computed tomography angiography.

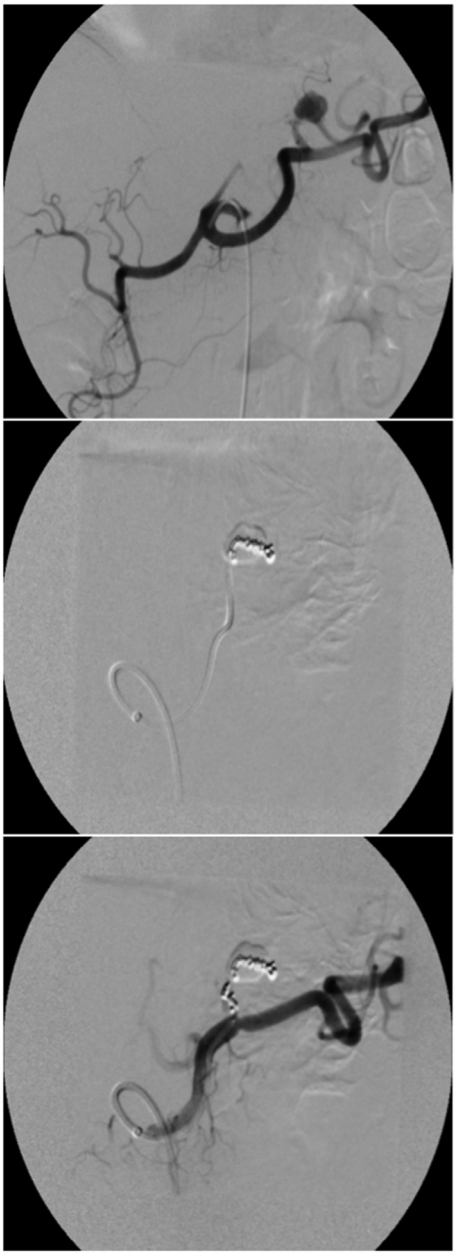

Figure 2. Angiography documenting the aneurysm and the final result, after coil embolisation.

DISCUSSION

The posterior gastric artery (PGA) has been known since 1740, having been named in 1745 by Haller. Its surgical importance is related to the risk of gastric ischaemia in splenectomy and neoplastic surgery procedures.[4] In most cases it originates from the left gastric or the splenic arteries near the coeliac trunk,[5] ascends behind the posterior parietal peritoneum of the omental bursa, and supplies the superior portion of the posterior wall of the gastric body, near the cardiac area, and the fundus. It usually arises from the superior aspect of the splenic artery, in the middle third, and averages 2 mm in diameter (its diameter is larger than the short gastric arteries and sometimes matches the size of the left gastric artery).[4] Owing to the rarity of these aneurysms, there are no guidelines for their management. They most frequently develop secondary to an adjacent inflammatory process.[6] Other causes include medial degeneration, arteriosclerosis, trauma, arteritis, fibromuscular dysplasia, and connective tissue disorders. Also, mycotic visceral artery aneurysms as a result of infected thromboemboli or seeding of an existing aneurysm have been reported.[6]

Patients with visceral artery aneurysms are often asymptomatic and the diagnosis is incidental. However, some patients may present with vague abdominal discomfort or life threatening bleeding because of rupture into the gastrointestinal tract or the peritoneal cavity,[6] which is associated with morbidity and mortality[7] (as high as 70%[2]). Any GAA discovered before rupture should, therefore, be repaired.

In the past, emergency or ruptured cases were usually managed by laparotomy; open surgical repair included aneurysmectomy and ligation. Revascularisation procedures were indicated only in special settings.[7,8] Presently, an endovascular approach after diagnostic CTA is the preferred method in most centres.

For non-emergency aneurysms, a successful laparoscopic approach has also been reported.[8]

Selective arterial angiography with endovascular coil embolisation is possible in some cases,[7] such the one reported here. The technique when dealing with saccular aneurysms should include embolisation of both the proximal and distal feeding arteries along with coil deployment inside the sac (especially if the efferent vessel cannot be embolised). Proximal embolisation alone should not be performed because the aneurysm may recruit a robust retrograde vascular supply.[9]

A full vascular assessment in these cases is recommended as concomitant visceral aneurysms may exist.[7]

The presented case is exceedingly rare and not previously reported in the literature. This type of aneurysm has to be kept in mind as a possible cause of bleeding, despite the limited information regarding their natural history.

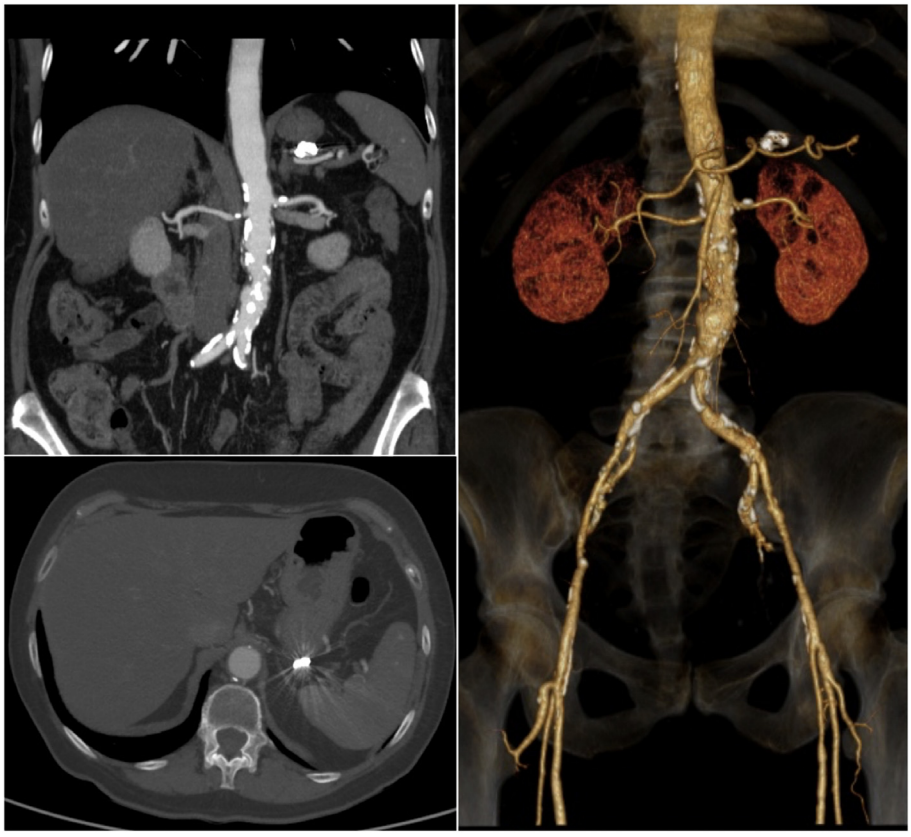

Figure 3. Computed tomography angiography demonstrating exclusion of the posterior gastric artery aneurysm.

CONCLUSION

PGA aneurysms are extremely rare and when endovascular treatment is feasible, it is probably the best alternative.

CONFLICTS OF INTEREST

None.

FUNDING

None.

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